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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

RO, BENTSU

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/565,345	Applicant(s) MAIOCCHI, SERGIO A.	
	Examiner BENTSU RO	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 47-68 and 84-86 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 47-53, 55-57, 64-68 and 84-86 is/are allowed.
- 6) ☒ Claim(s) 54 and 58-63 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

FIRST OFFICE ACTION ----- A NONFINAL REJECTION

1. In response to the restriction requirement (mailed 5/9/2008), applicant has elected Group I, claims 47-68 and 84-86 for prosecution, presumably without traverse. All other claims have been canceled.

The examiner has imposed another restriction based on different species. See the **Examiner's Comments** in paragraph 7 below.

2. The drawings filed on 9/12/2008 (total 68 sheets) are acceptable.

3. The following claims recited elements that have no proper antecedent basis. Corrections are required.

- Claims 62 and 63, each line 2, the recitation "the flyback inductance" lacks antecedent basis. Claims 62 and 63 both depend on claim 58. Claim 58 does not define a "flyback inductance".
- Claim 67, line 2, the recitation "means for measuring" lacks antecedent basis. Claim 67 depends on claim 47. Claim 47 does not define a "means for measuring". It is noted that the "means for measuring" is defined in claims 54, 58 and 60, but not in claim 47.

4. To improve the readability, claims 51 and 52 should be amended as follows:

- Claim 51, line 3, between "said diode" and "if said first switch", insert --and--.

- Claim 52, line 4, between "electronic switch" and "if said first switch", insert --and--.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 54, 58-63 are rejected under 35 U.S.C. 102(b) as being anticipated by Nayberg USPN 4,581,692.

Claims read onto Nayberg et al teaching as follows:

The claims:	Nayberg et al teaching:
Claim 54 (previously presented): A system for driving a direct-current (DC) motor under conditions of a controlled average current,	Fig. 2 (the prior art) teaches a system for driving a load 20; in the text, Nayberg does not specify the type of load, however, any dc electric load can be used, including a dc motor; the system of Fig. 2 is to control the load current; further, there is a capacitor (no reference numeral but next to the voltage sensor 45) connected in parallel to the load 20, this capacitor smooth out the current ripple (if any), thus, the capacitor controls the average current to the load 20;
a voltage of a DC power supply having a larger or smaller value than a motor nominal voltage,	Fig. 2 shows a "fluctuating" dc voltage supply 16, see column 1, line 53, the word "fluctuating"; because the dc voltage is "fluctuating", it can be larger or smaller than the nominal voltage of the load 20;
said system comprising:	

Art Unit: 2837

<p>an inductive element for connection in series with the DC motor,</p>	<p>Fig. 1 shows an output inductor 36 connected in series with the load 20; again, the load 20 can be any dc load including a dc motor;</p>
<p>said inductive element capable of operating in a buck converter at the power level required to operate said DC motor and at the frequency of a first switch;</p>	<p>the "a first switch" reads onto the thyristor 32; the converter 22 is a buck converter because the transformer 28 is a step-down transformer; the inductor 36 is operating with the buck converter 22 at a power level required to operate the load 20 and at the switching frequency of the thyristor 32;</p>
<p>an arrangement including a plurality of switches, diodes and a magnetic system,</p>	<p>Fig. 1 shows thyristor switches 32, 34; full-wave rectifier diodes 30; and a transformer 28; the transformer 28 is a magnetic system; thus, the thyristors, the rectifier diodes and the transformer all together constitute an arrangement;</p>
<p>said arrangement coupled to said inductive element for connecting and disconnecting a terminal of said inductive element remote from said motor to a voltage source,</p>	<p>the arrangement is connected to the inductor 36; the thyristor 32 controls connecting and disconnecting the transformer 28 from the dc voltage supply 16; the connecting/disconnecting of the transformer 28 also connects and disconnects the terminals of the inductor 36 from the voltage supply 16; it is noted that the inductor 36 and its terminals are not a part of the load 20, thus, the inductor is remote from the load 20;</p>
<p>said arrangement configured as circuit selected from the group consisting of:</p> <ul style="list-style-type: none"> • a forward DC-DC converter • a push-pull DC-DC converter 	<p>the arrangement at least is</p> <ul style="list-style-type: none"> • a forward dc-dc converter; • a full bridge dc-dc converter;

Art Unit: 2837

<ul style="list-style-type: none"> • a half-bridge DC-DC converter • a diagonal-half bridge DC-DC converter • a full bridge DC-DC converter <p>a capacitor arranged for connection in parallel with said motor to limit a resulting voltage over the motor, said capacitor capable of operating in a buck converter at the power level required to operate said DC motor and at the frequency of commutation of said first switch;</p> <p>means for measuring a current through the motor; and</p> <p>means for controlling operation of said arrangement dependent upon said measured current in the motor.</p>	<p>"a capacitor" reads onto the capacitor (no reference numeral but next to the voltage sensor 45);</p> <p>the capacitor is connected in parallel with the load 20;</p> <p>the capacitor has filtering effect (or smoothing effect) which limits the ac voltage peaks, thus, limiting a resulting voltage over the motor;</p> <p>the capacitor cooperates with the buck converter 22 in a same manner as that of the inductor 36 cooperates with the buck converter 22, as explained previously;</p> <p>the current sensors 41 and 51;</p> <p>the logic control circuit 37 and the conduction control circuit 35 together constitute a controlling means.</p>
<p>Claim 58 (previously presented): A system for driving a direct-current (DC) motor under conditions of a controlled average current, a voltage of a DC power supply having a larger or smaller value than a motor nominal voltage, said system comprising:</p> <p>a diode;</p> <p>a magnetic transformer connected in series with said diode in a circuit arrangement</p> <p>selected from the group consisting of a flyback DC-DC converter and a ringing</p>	<p>same as that of claim 54;</p> <p>same as the "arrangement" of claim 54;</p> <p>the converter 22 is a flyback dc-dc converter (a buck converter);</p>

Art Unit: 2837

<p>choke DC-DC converter, said transformer and said diode for connection in series with the DC motor;</p> <p>a switch coupled to said magnetic transformer and said diode for connecting and disconnecting a terminal of said magnetic transformer and said diode remote from said motor to a voltage source;</p> <p>a capacitor arranged for connection in parallel with said motor to limit a resulting voltage over the motor, said capacitor capable of operating in a buck converter at the power level required to operate said DC motor and at frequency of commutation of said switch;</p> <p>means for measuring a current through the motor; and</p> <p>means for controlling operation of said switch dependent upon said measured current in the motor.</p>	<p>same as claim 54;</p> <p>same as claim 54;</p> <p>same as claim 54;</p> <p>same as claim 54;</p> <p>same as claim 54.</p>
<p>Claim 59 (previously presented): The system according to claim 58, wherein said switch is an electronic switch.</p>	<p>the thyristors 32 and 34 are electronic switches.</p>
<p>Claim 60 (previously presented): A system for driving a direct-current (DC) motor under conditions of a controlled average current, a voltage of a DC power supply having a larger or smaller value than a motor nominal voltage, said system comprising:</p> <p>an electronic synchronous rectification switch;</p>	<p>same as that of claim 54;</p> <p>anyone of the diodes inside the full-wave rectifier 30 is an electronic synchronous rectification switch;</p>

<p>a magnetic transformer connected in series with said synchronous rectification switch in a circuit arrangement selected from the group consisting of a flyback DC-DC converter and a ringing choke DC-DC converter, said transformer and said synchronous rectification switch for connection in series with the DC motor;</p> <p>a switch coupled to said magnetic transformer and said synchronous rectification switch for connecting and disconnecting a terminal of said magnetic transformer and said synchronous rectification switch remote from said motor to a voltage source;</p> <p>a capacitor arranged for connection in parallel with said motor to limit a resulting voltage over the motor;</p> <p>means for measuring a current through the motor; and</p> <p>means for controlling operation of said switch dependent upon said measured current in the motor.</p>	<p>same as that of claim 54 or claim 58.</p>
<p>61.</p>	<p>same as claim 59</p>
<p>62 and 63.</p>	<p>these claims are unclear because the "flyback inductance" is undefined; however, the "flyback inductance" maybe a misprinted of "flyback converter", if this is true, then the converter 22 is a flyback converter.</p>

7. **Examiner's Comments:**

Claims 47-53, 55-57, 64-68, 84-86 are one group of claims relate to Fig. 7C of this instant application.

Claim 54 relates to Fig. 7D.

Claims 58-63 relate to Fig. 7E.

The examiner hereby imposes a restriction requirement to examine a single species of Fig. 7C or claims 47-53, 55-57, 64-68 and 84-86. The other species Figs. 7D and 7E or claims 54 and 58-63 are not allowable as explained previously and the subject matters of these claims are quite different from that of Fig. 7C. In view of the foregoing reasons, applicant should cancel claims 54 and 58-63.

8. Claims 47-53, 55-57, 64-68 and 84-86 are allowable. These claims are allowable because no prior art teaches a combination of circuit elements similar to that of Fig. 7C. It is noted that the independent claims 47, 49 and 50 are claiming similar elements as shown in that of Fig. 7C.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning this communication should be directed to BENTSU RO at telephone number (571)272-2072.

/BENTSU RO/
Primary Examiner, Art Unit 2837